



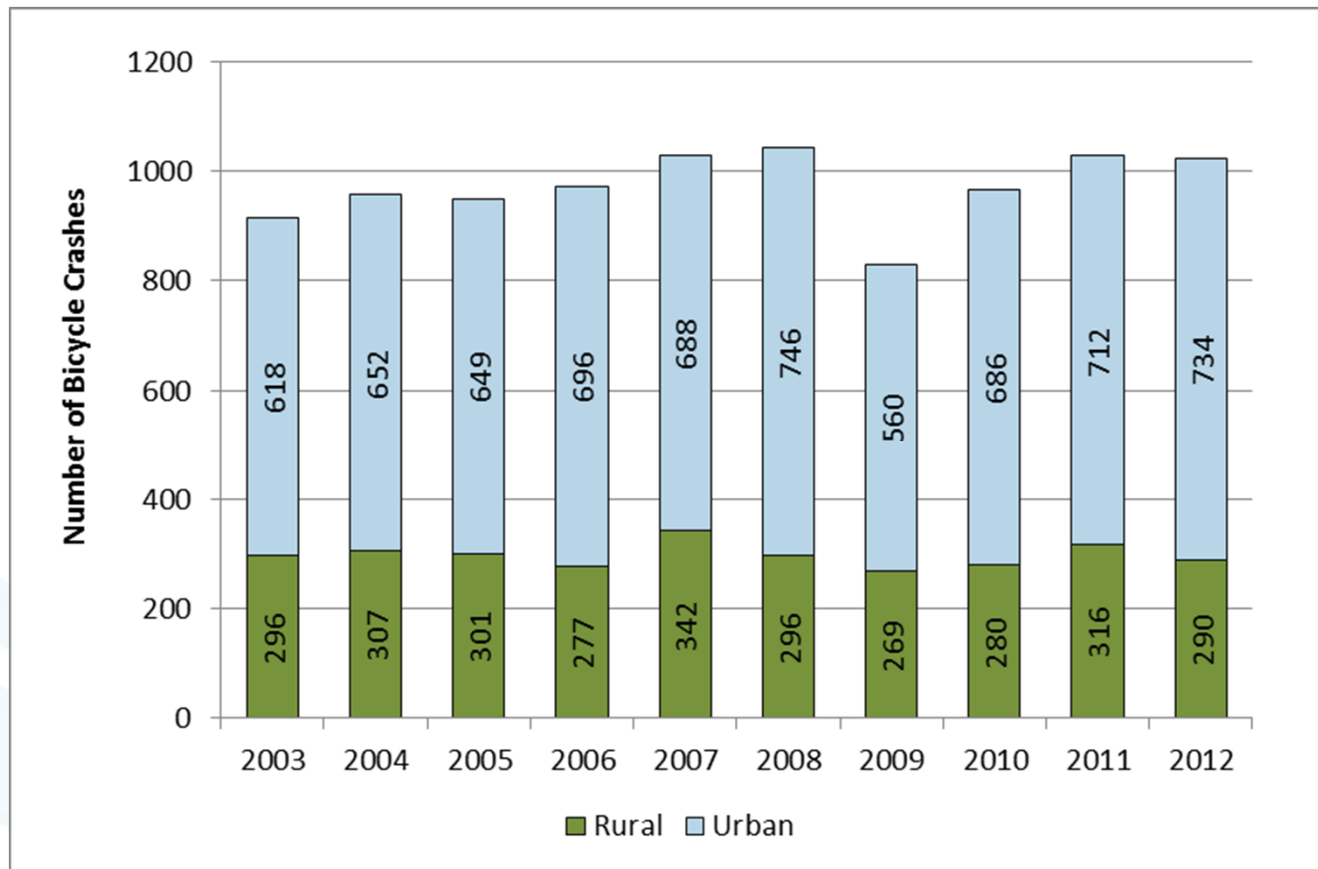
North Carolina Bicycle Crash Facts and Trends

2008-2012

Data compiled by Libby Thomas and Daniel Levitt, HSRC

**How many bicyclists are being
hit in North Carolina?**

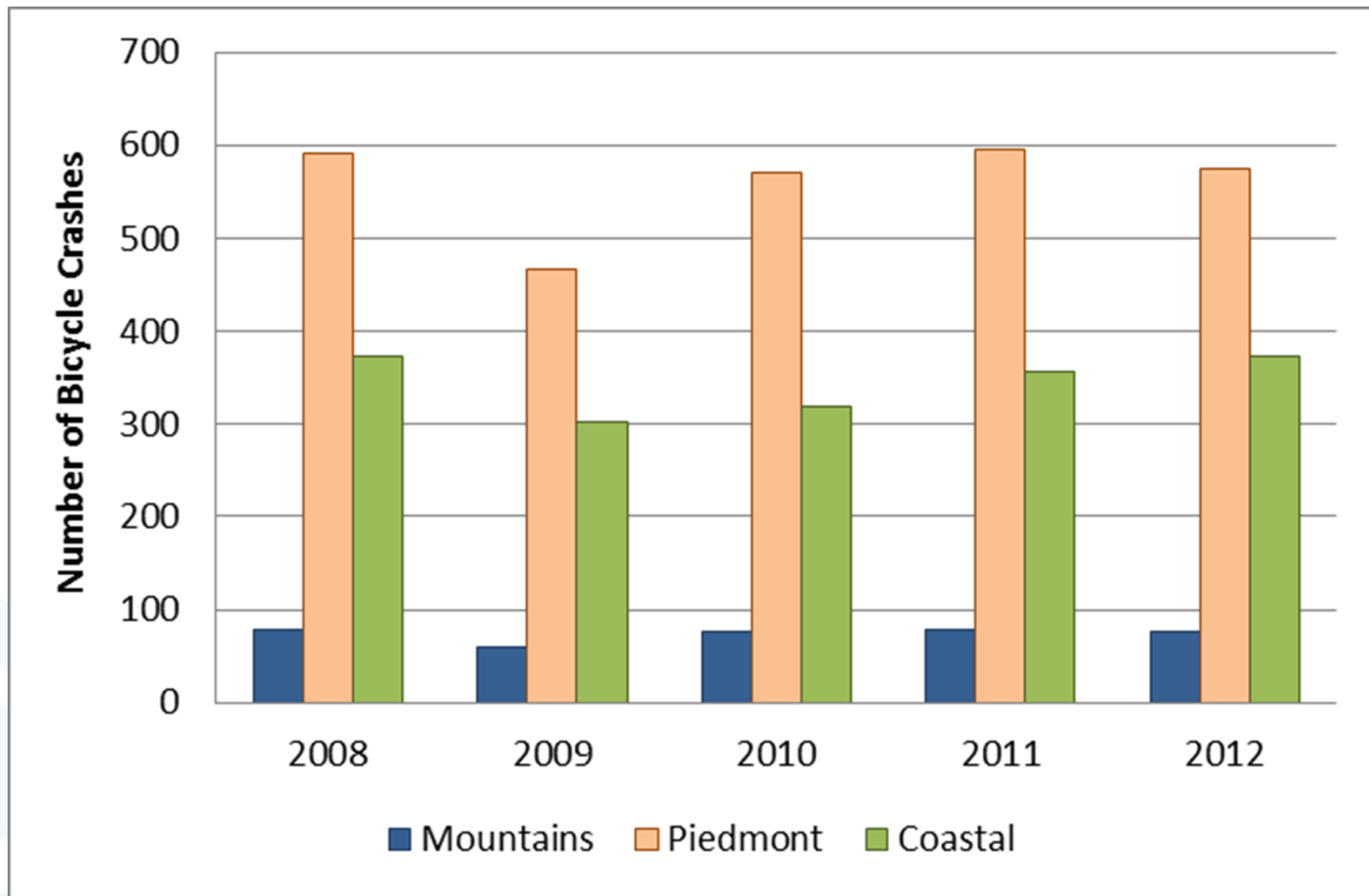
General Trends



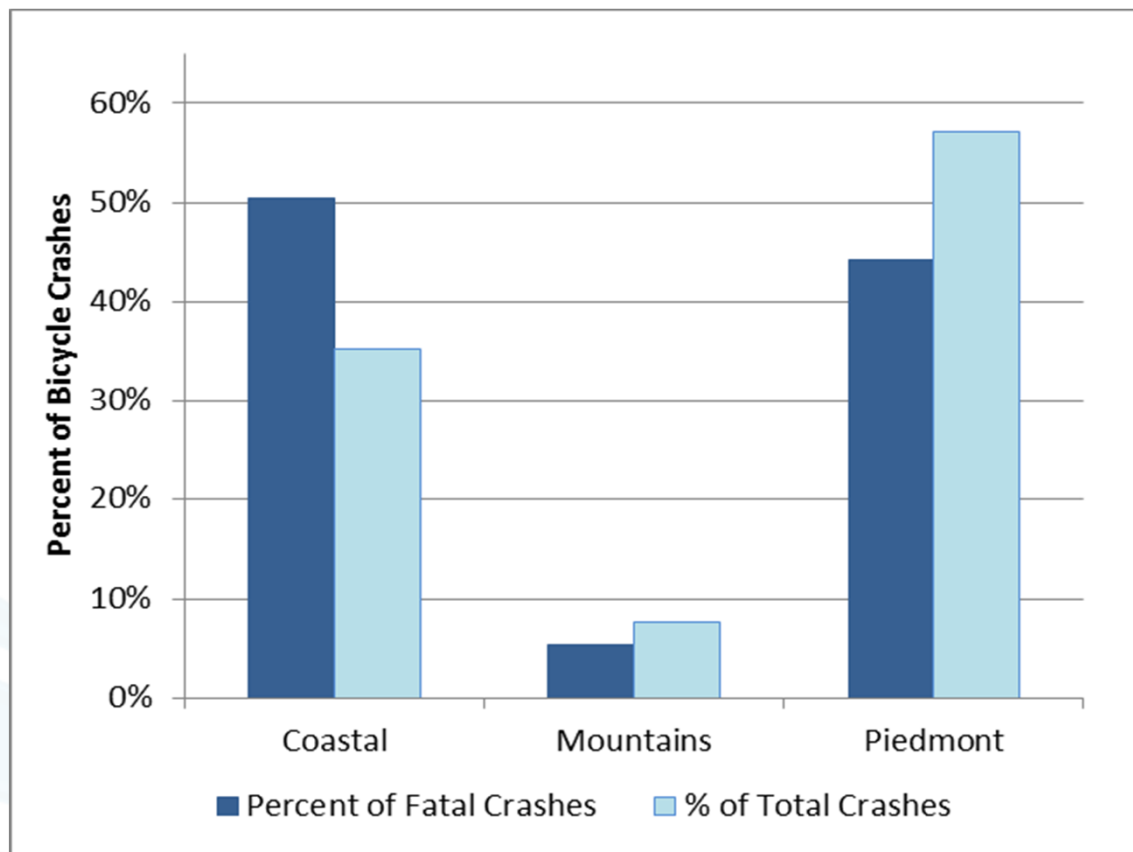
Fatal and Disabling Crashes



Crash Trends by Region



Fatal and Total Crashes by Region



Crashes by Development Extent

Development extent	2008	2009	2010	2011	2012	Total
Rural (<30% Developed)	158	144	171	166	148	787
	15.2 ¹	17.4	17.7	16.1	14.5	16.1 ²
Mixed (30% To 70% Developed)	161	131	111	143	130	676
	15.5	15.8	11.5	13.9	12.7	13.8
Urban (>70% Developed)	723	554	684	719	746	3,426
	69.4	66.8	70.8	69.9	72.9	70
Total	1,042	829	966	1,028	1,024	4,889 ⁴
	21.3 ³	17	19.8	21	20.9	

Crashes by Development Type

Development type	2008	2009	2010	2011	2012	Total
Commercial	465	317	384	429	435	2,030
	44.6	38.2	39.8	41.7	42.5	41.5
Farms, Woods, Pastures	120	126	130	138	108	622
	11.5	15.2	13.5	13.4	10.5	12.7
Industrial	1	2	4	4	3	14
	0.1	0.2	0.4	0.4	0.3	0.3
Institutional	30	21	35	25	39	150
	2.9	2.5	3.6	2.4	3.8	3.1
Residential	426	363	413	432	439	2,073
	40.9	43.8	42.8	42.0	42.9	42.4
Total	1,042	829	966	1,028	1,024	4,889
	21.3	17.0	19.8	21.0	20.9	

Counties with most crashes

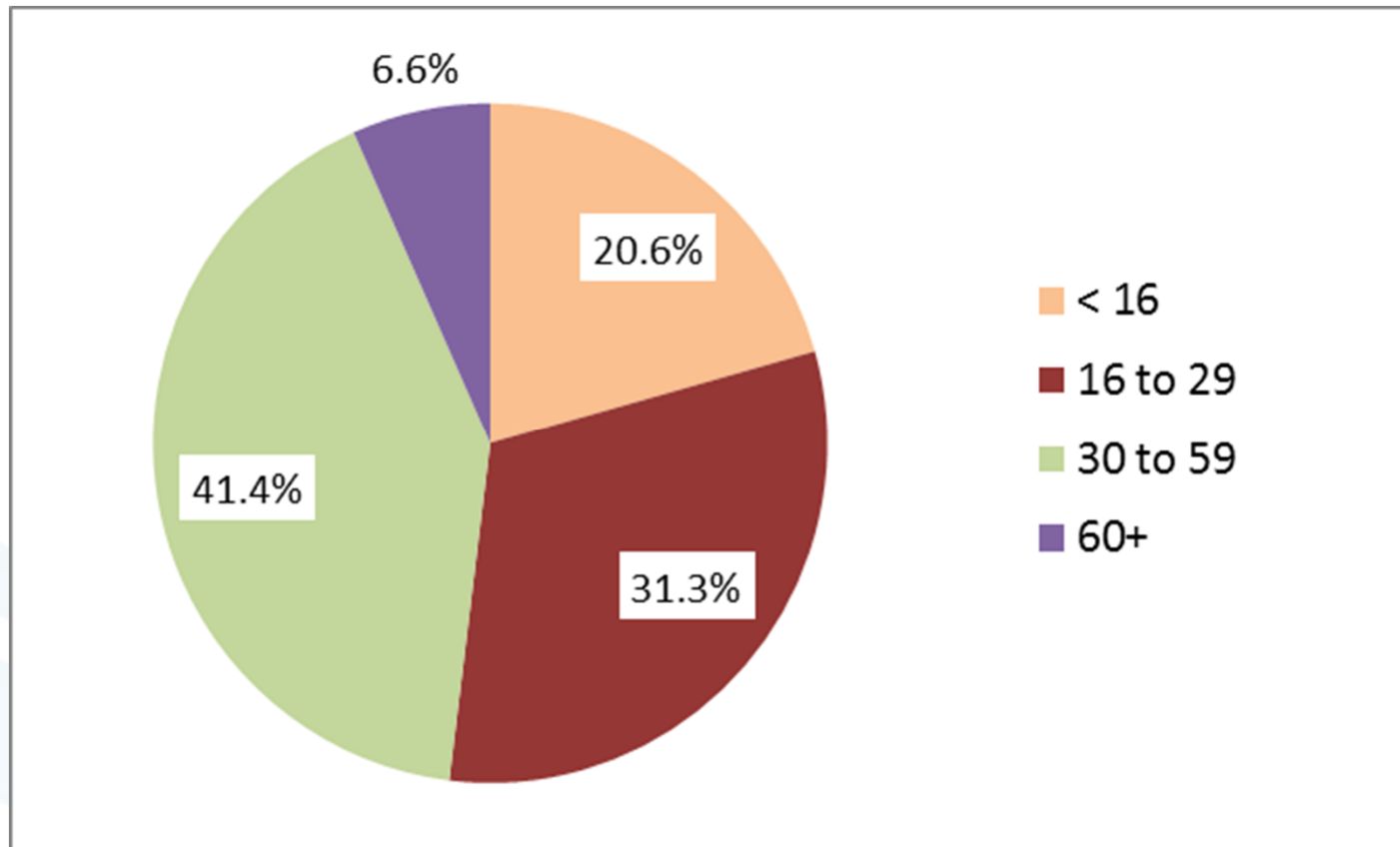
County	5-yr. Crash Count	% of NC total (4,894)	Avg. 1-yr. Count	July 2010 Estimate	Avg. yearly crash rate / 10,000 residents	Prior Avg yrly rate (2006- 2010)
Wake	651	13.3	130.2	906,908	1.4	1.4
Mecklenburg	580	11.9	116.0	923,390	1.3	1.4
Guilford	344	7	68.8	489,677	1.4	1.3
New Hanover	329	6.7	65.8	203,299	3.2	2.8
Durham	215	4.4	43.0	271,297	1.6	1.5
Cumberland	184	3.8	36.8	327,445	1.1	1.3
Orange	128	2.6	25.6	134,302	1.9	1.8
Buncombe	126	2.6	25.2	238,886	1.1	1.1
Forsyth	106	2.2	21.2	351,381	0.6	0.6
Gaston	93	1.9	18.6	206,139	0.9	1.0
Robeson	92	1.9	18.4	134,422	1.4	1.7
Pitt	91	1.9	18.2	168,787	1.1	1.1
Subtotal top 12 Counties	2,939	60.1%	587.8	4,355,933	1.3	1.4

Key Takeaways on General Crash Figures

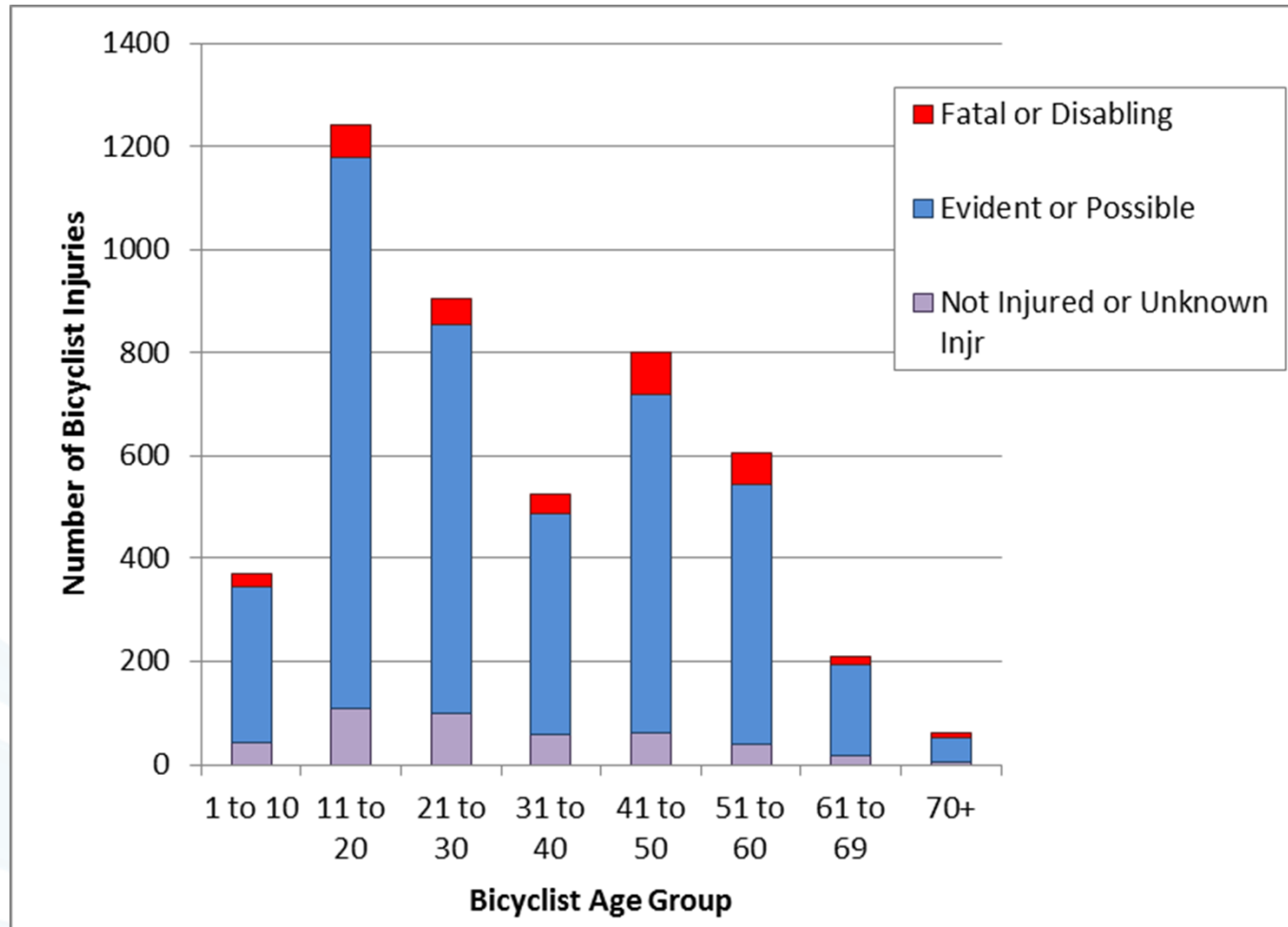
- On average, about 960 bicyclists are hit each year with 22 fatalities
- Crashes occur more frequently in the Piedmont area than the Coastal and Mountain areas of the state.
- Half of the fatal crashes occur in the Coastal areas.
- Most crashes (70 percent) occur in urban parts of the state, with more than 80 percent occurring in commercial and residential areas.

Who is getting hit and when?

Percent of NC Crashes by Bicyclist Age



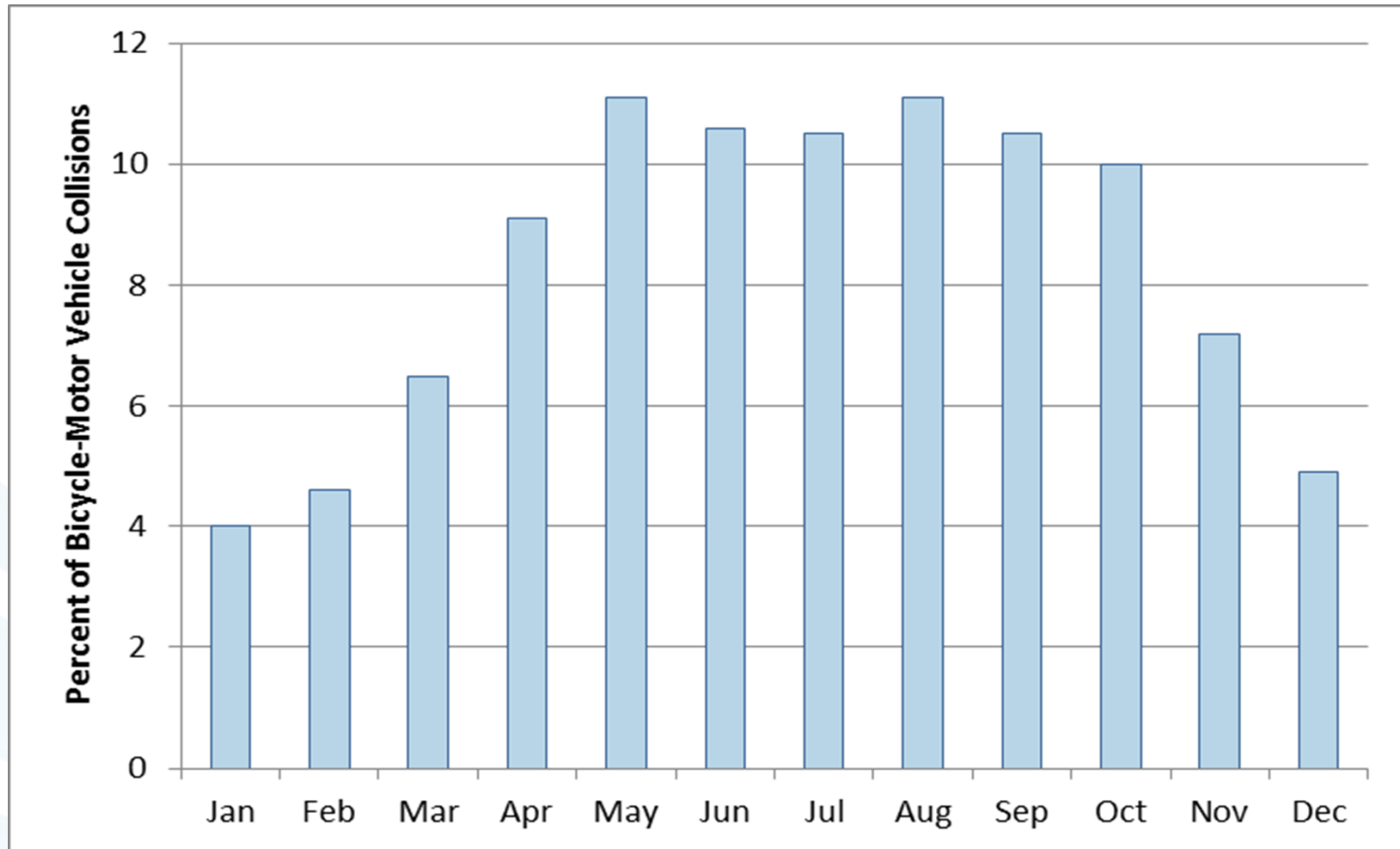
Injury Severity by Age Group



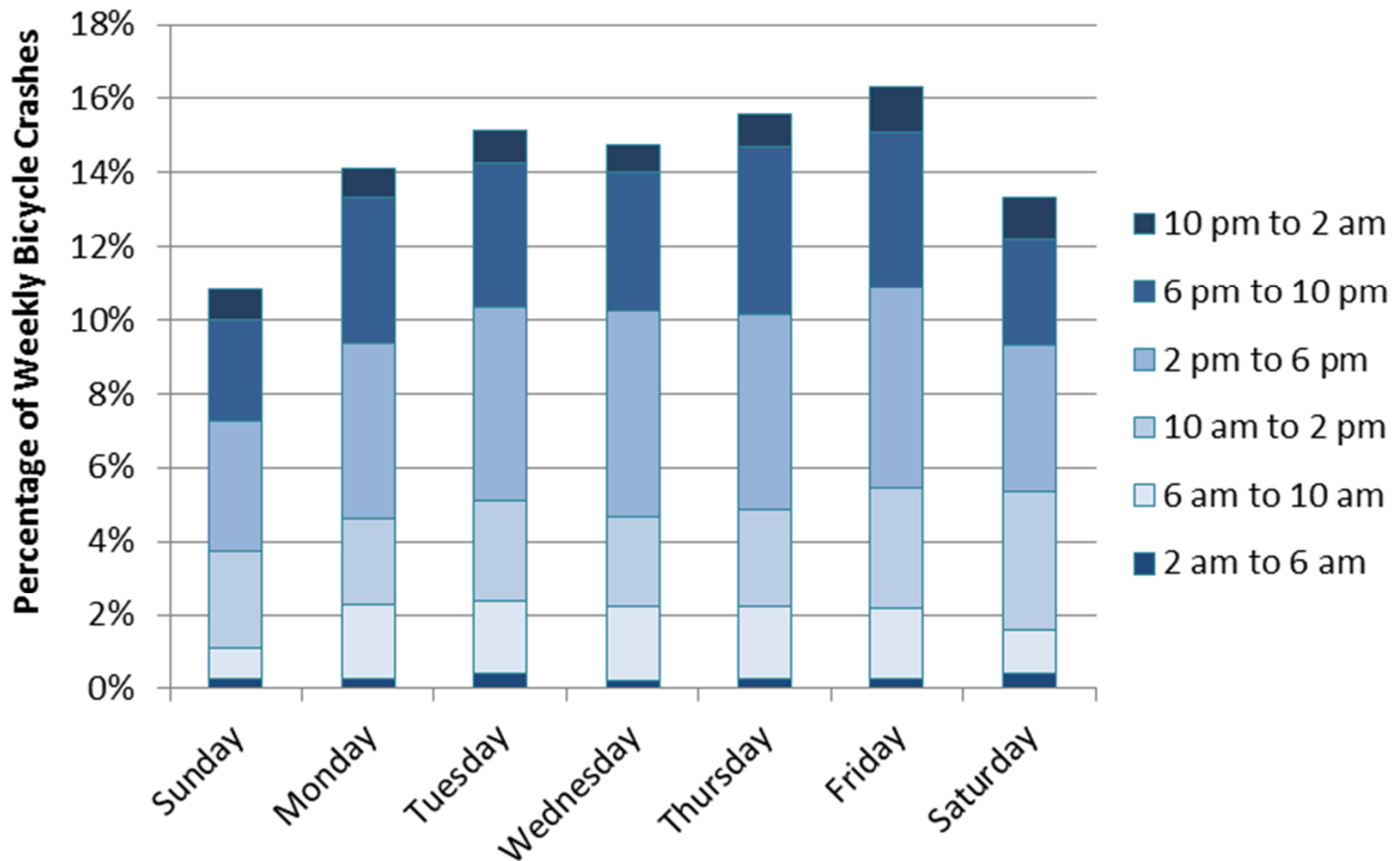
Crashes by Gender

Gender	2008	2009	2010	2011	2012	Total
Female	157	116	130	155	163	721
	15.2	14.1	13.6	15.4	16.3	15
Male	878	708	831	850	835	4,092
	84.8	85.9	87.4	84.6	83.7	85
Total	1,035	824	951	1,005	998	4,813
	21.5	17.1	19.8	20.9	20.7	

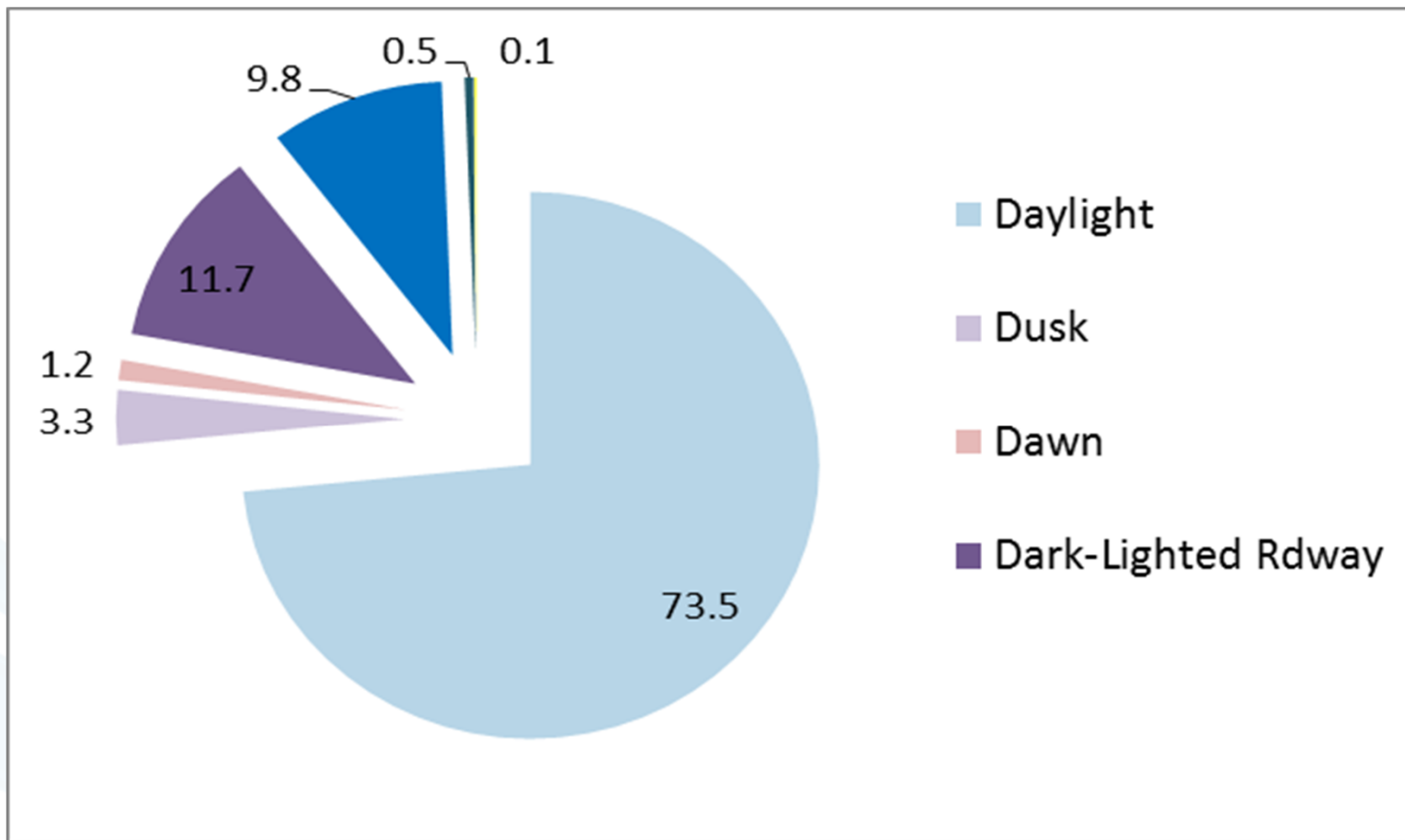
Crashes by Month



Crashes by Day and Time



Crashes by Light Condition

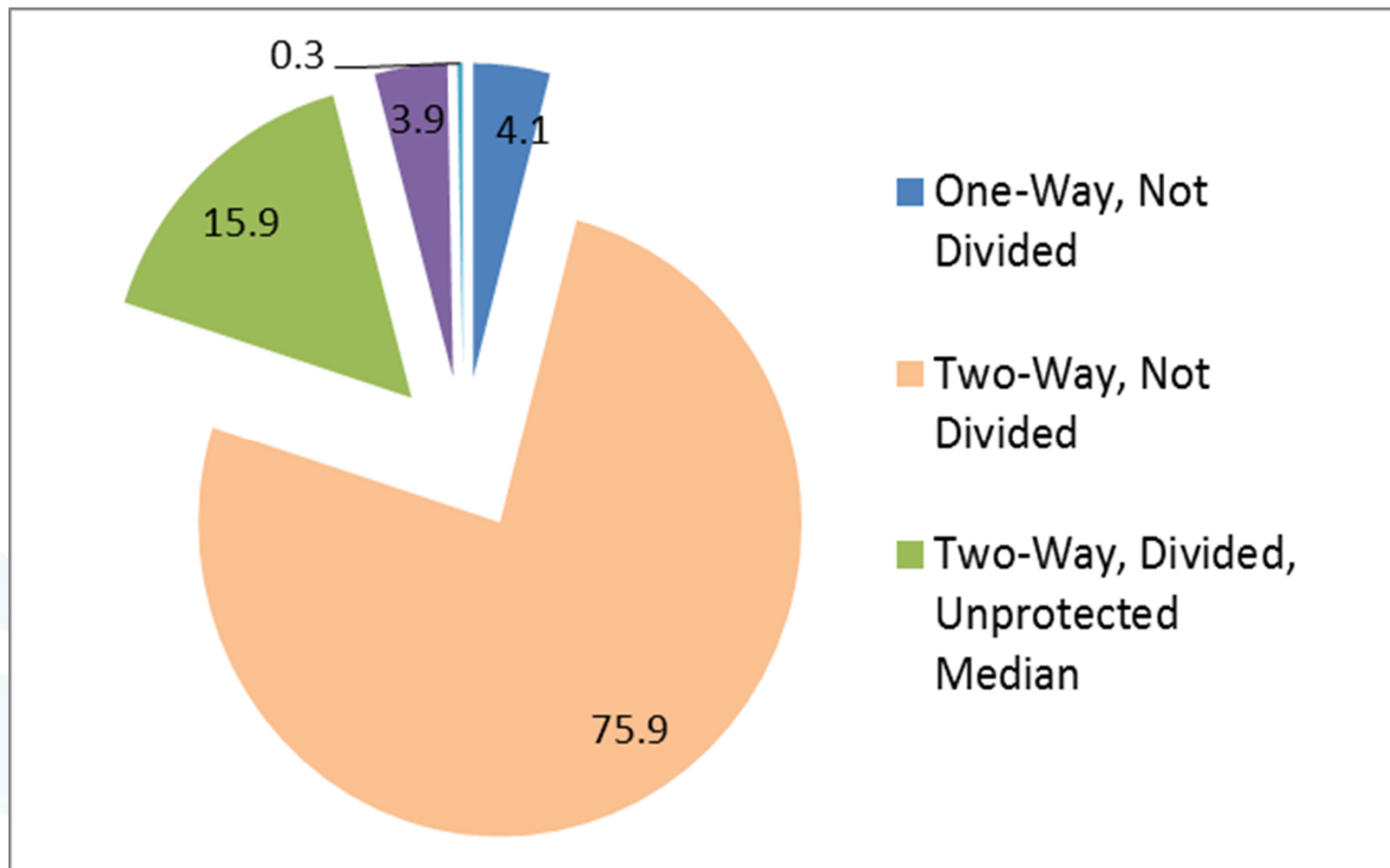


Key Takeaways on Who is Being Hit and When

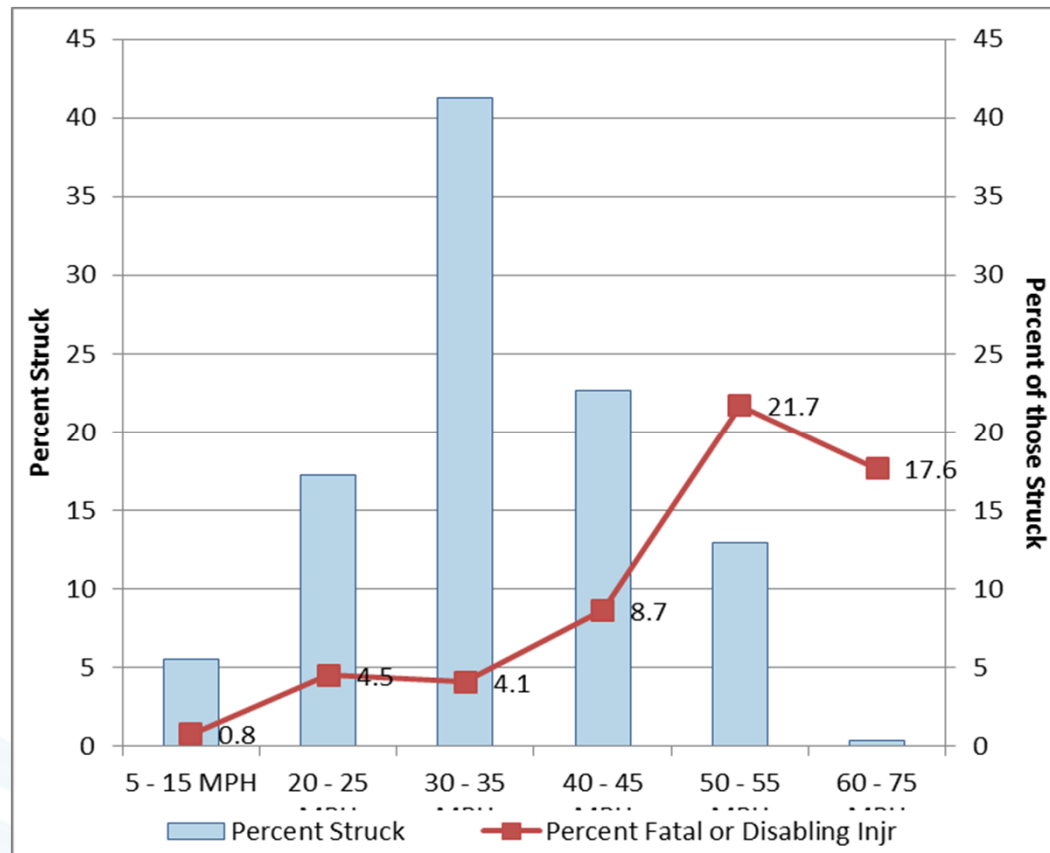
- People aged 30-59 account for more than 40 percent of all crashes.
- Men are most likely to be struck, accounting for 85 percent of crashes.
- Crashes increase in warmer months.
- Most crashes – nearly three-quarters – occur during the day

Crash Types, Road Conditions and Causes

Roadway Characteristics

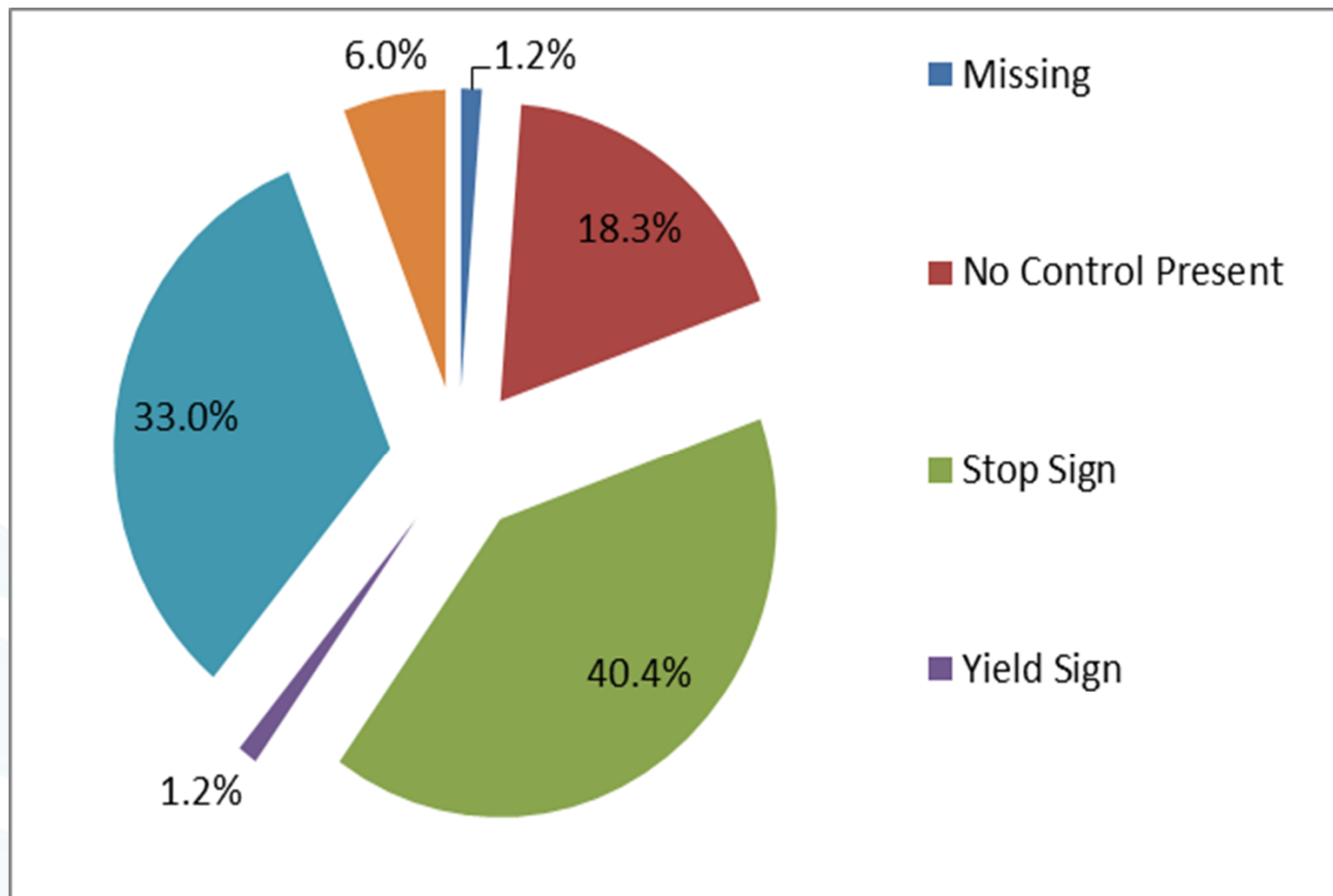


Road Speed Limits



The red line and markers indicate the percentage of crashes on the different speed limit roads with fatal or disabling injuries.

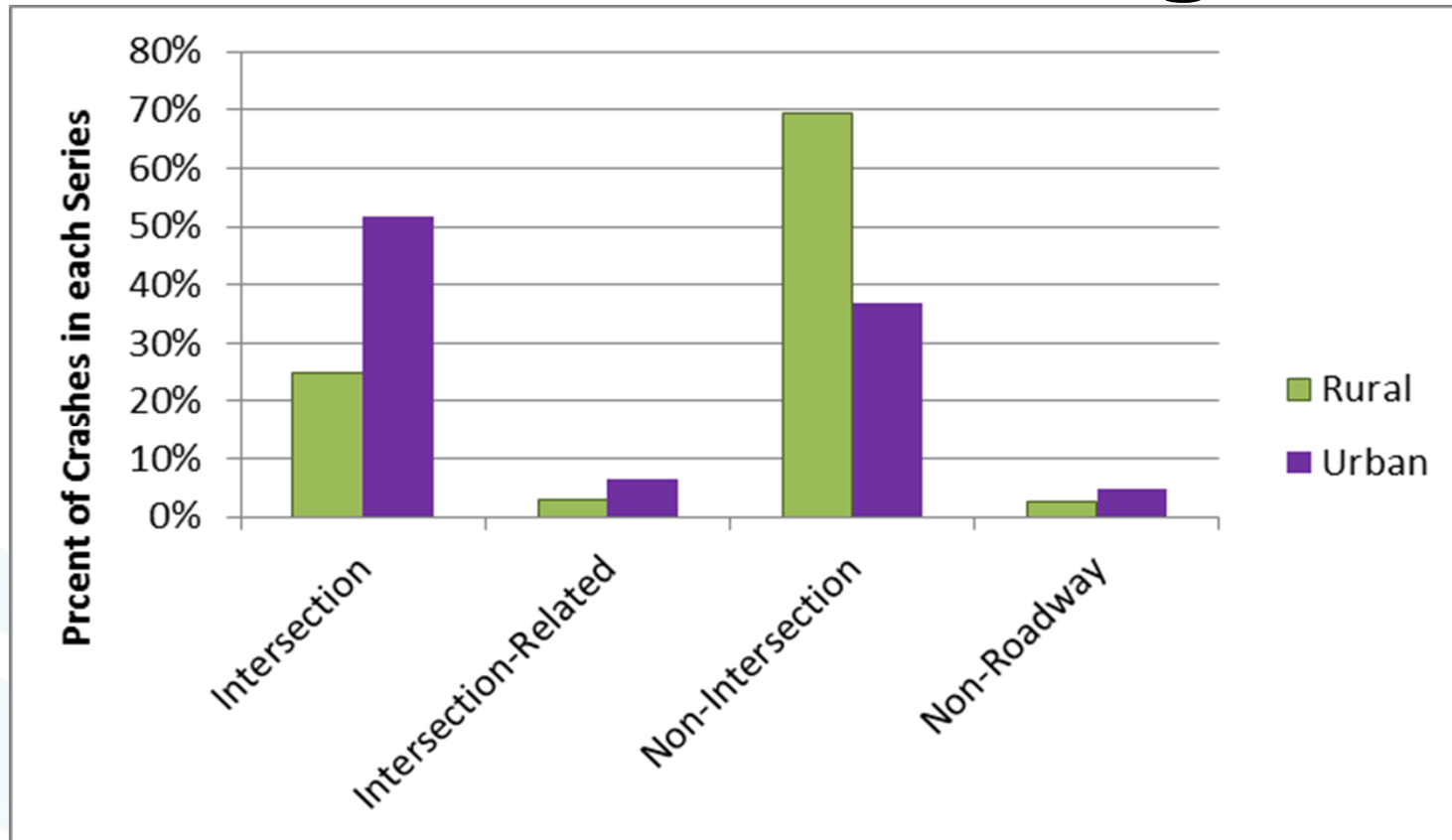
Traffic Control Devices Present?



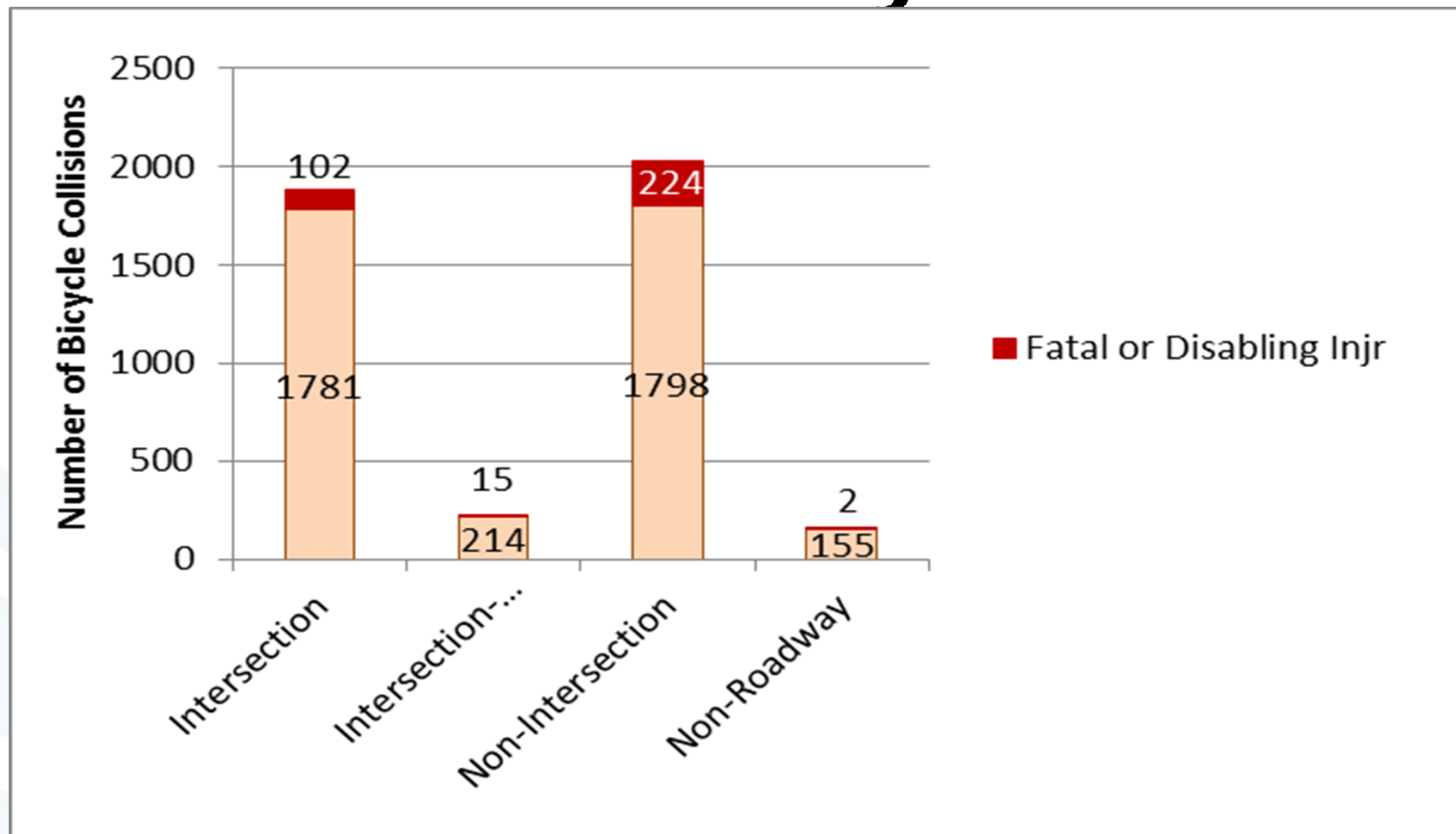
Location of Crashes on the Roadway

Crash Location	2008	2009	2010	2011	2012	Total
Intersection	461	350	411	448	466	2,136
	44.2 ¹	42.2	42.5	43.6	45.5	43.7 ²
Intersection-Related	28	32	55	65	89	269
	2.7	3.9	5.7	6.3	8.7	5.5
Non-Intersection	501	402	463	469	437	2,272
	48.1	48.5	47.9	45.6	42.7	46.5
Non-Roadway	47	42	37	46	31	203
	4.5	5.1	3.8	4.5	3	4.2
Unknown Location	5	3	0	0	1	9
	0.5	0.4	0	0	0.1	0.2
Total	1,042	829	966	1,028	1,024	4,889
	21.3 ³	17	19.8	21	20.9	

Location Differences in Rural vs. Urban Settings



Crash Location and Injury Severity



Bicyclist Position Before Crash

Bicyclist Position	2008	2009	2010	2011	2012	Total
Travel Lane	635	547	674	701	691	3,248
	60.9 ¹	66	69.8	68.2	67.5	66.4 ²
Bike Lane / Paved Shoulder	71	37	58	47	51	264
	6.8	4.5	6	4.6	5	5.4
Sidewalk / Crosswalk / Driveway Crossing	179	124	148	173	170	794
	17.2	15	15.3	16.8	16.6	16.2
Multi-use Path	7	3	6	7	7	30
	0.7	0.4	0.6	0.7	0.7	0.6
Driveway / Alley	18	16	25	24	17	100
	1.7	1.9	2.6	2.3	1.7	2
Non-Roadway	63	50	37	57	54	261
	6	6	3.8	5.5	5.3	5.3
Other	8	5	5	5	3	26
	0.8	0.6	0.5	0.5	0.3	0.5
Unknown	61	47	13	14	31	166
	5.9	5.7	1.3	1.4	3	3.4
Total	1,042	829	966	1,028	1024	4,889
	21.3 ³	17	19.8	21	20.9	

Bicyclist Travel Direction

Bicyclist Direction	2008	2009	2010	2011	2012	Total
With Traffic	628	503	612	658	640	3041
	60.3 ¹	60.7	63.4	64	62.5	62.2 ²
Facing Traffic	252	175	212	212	255	1106
	24.2	21.1	21.9	20.6	24.9	22.6
Not Applicable	118	123	111	138	95	585
	11.3	14.8	11.5	13.4	9.3	12
Unknown	44	28	31	20	34	157
	4.2	3.4	3.2	1.9	3.3	3.2
Total	1042	829	966	1028	1024	4,889
	21.3 ³	17	19.8	21	20.9	

Top Ten Crash Causes

Rank	Crash Type	Total	Percent of NC Total
1	Motorist Drive Out - Sign-Controlled Intersection	478	9.8%
2	Motorist Overtaking - Other / Unknown	438	9.0%
3	Motorist Left Turn - Opposite Direction	363	7.4%
4	Motorist Drive Out - Commercial Driveway / Alley	246	5.0%
5	Motorist Overtaking - Misjudged Space	235	4.8%
6	Bicyclist Left Turn - Same Direction	234	4.8%
7	Bicyclist Ride Through - Sign-Controlled Intersection	233	4.8%
8	Motorist Right Turn - Same Direction	211	4.3%
9	Non-Roadway	203	4.2%
10	Motorist Overtaking - Undetected Bicyclist	141	2.9%
Subtotal for top ten types for frequency		2782	56.9%

Key Takeaways on Crash Types and Causes

- Most crashes happen on two-way undivided roads.
- Crashes are most prevalent on roads with 30-35 mph speed limits.
- 40 percent of crashes occur at intersections with a stop sign.
- Crashes occur equally at intersections and non-intersections.
- In urban areas, crashes occur more frequently at intersections. In rural areas, crashes occur more frequently at non-intersections.
- Non-Intersection crashes are more dangerous for bicyclists, accounting for more than half of all fatal and disabling injury crashes.

Key Takeaways on Crash Types and Causes

- Crashes commonly occur when the bicyclist is traveling in the roadway.
- While most of the time the bicyclist was correctly traveling with traffic, nearly a quarter of crashes included a bicyclist riding against traffic.
- Motorists pulling out into traffic or making turns cause more than a quarter of all crashes.
- Motorists overtaking bicyclists cause more than 16.7 percent of crashes.
- Bicyclists turning cause nearly 10 percent of crashes.